REMARKS

The French reference 2588429 has been carefully considered. The French reference deals with a low output motor MI intended for series connection with a main electrical apparatus. This MI motor operates on a significant voltage, i.e. 3 to 5% of the source voltage, across its terminals and, in effect, is simply a conventional motor made with fewer turns (but still a very large number of turns compared to the present invention) and larger diameter wire (but still a fine wire compared to the present invention) than a conventional motor. The French MI motor windings are specifically designed to fit a specific load, that is, accept the particular current flowing through a particular main electrical apparatus without heating. It is in this sense that the reference states that the operation of the motor MI is determined only by the intensity of the alternating current I passing through it.

In contrast to the reference's MI motor, applicant's motor is designed to provide changes in speed with different resistances or loads.

While the French reference calls for the MI motor windings to be of wire "with a large cross section", the only example which the reference gives explaining what is meant by wire of large cross section is found on page 5, bottom paragraph where it says "The motor (MI) contains for example a stator winding with 40/100 mm diameter copper wire achieving two poles of 150 turns each on the motor." Thus the number of turns of this MI motor is 300 turns.

On this same page in describing a conventional motor (Figure 1), the statement is made "For power less than 10 W, wire diameters are about 10/100 mm." Thus, in moving from the motor (M) in Figure 1 to the motor (MI) in Figure 2, the diameter of the wire in motor (MI) is increased from 10/100 mm to 40/100 mm, that is, four times the diameter of the wire in motor (M).

From wire gauge tables, a wire having a diameter of 40/100 mm or .04 mm would be a number 26 gauge wire. Such a wire would heat and burn

up should an attempt be made to pass a current of 12.5 amps therethrough. In contrast, the size of wire presently being used by the applicant in manufacturing its motors is a 17 gauge wire having a nominal diameter of 0.0453 inches as per the American Wire Gauge Table (copy attached as Exhibit "A") or 1.15 mm, that is, some 2.9 times the size of the wire used in the French MI example and some 11 ½ times the size of the wire in the conventional motor (shown in Figure 1). This quantum wire size difference is illustrated in Exhibit "B" in which a 26 gauge wire given by the French reference MI motor was laid out along side a 17 gauge wire as used by the applicant and photocopied. A copy of Exhibit "B" is attached.

The use of wire of a size the same or substantially the same as the wire connecting the heater means to the source to enable the motor to operate at different speeds renders applicant's motor totally different from the French MI motor.

Another illustration of the fundamental difference is that if applicant's motor were connected directly to the source, it would cause a dead short and blow the fuse or circuit breaker. On the other hand, the French MI motor with the much finer 26 gauge wire and with the very much larger number of turns, namely, 300 would in fact operate when connected across the domestic source due to the significant resistance offered by the length of the relatively fine 26 gauge wire and the significant reactance offered by the relatively large number (300) of turns. While no doubt the MI motor so connected would heat up, if this heat was arranged to be carried away, for example by a fan operated by the motor, the motor would operate as a conventional motor as illustrated in Figure 1 of the reference.

The instructions given regarding the MI motor on page 5 to use heavier wire for both higher currents and lower currents by changing the number of turns is not only confusing but unhelpful and no examples are given.

In the motors which applicant is currently manufacturing, the motors are two pole motors having 17 turns of number 17 wire per pole for a length of wire per pole of approximately 6 feet or a total of 12 feet. The only example of the French MI motor given is one with 300 turns of number 26 wire which wire would have a length of over 100 feet.

In applicant's currently manufactured motors produced in accordance with the invention, for example, the actual voltage drop across the motor with a 500 watt heater is 1.23 volts giving a motor speed of some 1100 rpm; for a 1000 watt hater the voltage drop is 2.19 volts giving a motor speed of 1800 rpm; and for a 1500 watt heater the voltage drop is 2.74 volts giving a motor speed of 2800 rpm. Nowhere in the prior art is there a motor having these novel characteristics of applicant's motor.

The claims have been amended to more particularly point out the invention. Claim 1 now calls for an electrical circuit for connection to a conventional 120 volt source having a current capacity of the order of 15 amperes for powering a current controlled motor while generating heat. The claim next recites that the circuit comprises a resistor means whose value, eg. wattage, can be selected, is connected in series with the motor with the selected value of the resistor being such as to provide on connection of the circuit to the source a current flow through the resistor means to produce a voltage drop across the resistor means just less than the source voltage. The claim further recites that the current controlled motor has coil windings of fewer than 50 turns of a wire of a size to accept a current of up to about 15 amperes without heating whereby the current through the resistor means whose value has been selected determines motor speed. This principle of providing an induction motor wound with few turns of a wire size essentially able to carry the current carrying capacity of the source so that the speed of the motor can be varied in accordance with the selected value of the resistor or load is unique and completely different from the French reference. As explained above, the size of the wire used by the applicant as illustrated in Exhibit "A" is a quantum leap above the size of the wire given as the only example in the French reference.

It is respectfully submitted that Claim 1 as amended clearly and patentably distinguishes over the French reference and any known prior art.

Likewise, Claims 3, 4, 5, 6, 7 and 8 dependent upon Claim 1 are submitted as being allowable.

Claim 9 has been amended to claim a current controlled induction motor for driving a fan in a heater circuit to be connected to a domestic voltage source where a resistor heater means forms an electrical load having a value to provide on connection of the circuit to the source a voltage drop across the load just less than the voltage of the source. The motor is defined as having coil windings for connection in series with the heater means and the source with the coil windings having fewer than 50 turns and being of a wire size of 14 to 18 gauge to accept heater current of at least 12.5 amperes without heating.

For the reasons explained above in connection to Claim 1, such a motor having coil windings with fewer than 50 turns of a wire size to accept a heater current of at least 12.5 amperes is totally unique and allows the motor speed to be governed by the current drawn by the electrical load over a wide range of electrical loads without altering the windings of the motor. It is therefore respectfully submitted that Claim 9 and its dependent Claims 11 and 12 are allowable.

Again, Claim 13 calls for a current controlled induction motor having windings of fewer than 50 turns of 14 to 18 gauge wire having a current capacity of at least about 12.5 amperes without heating. As discussed above, such a motor is unique and inventive.

Claim 14 specifies that the motor is a two pole motor and that the motor windings comprise 14 turns per pole thus defining a very specific novel motor. Claims 15, 16 and 17 dependent from Claim 14 specify the motor speeds when the loads are 500, 1000 and 1500 watt heaters respectively following the examples given in the specification and adding further specific uniqueness.

Claim 18 calls for a motor for series connection with a selectable resistance means with the motor windings being of a size to accept a current substantially up to the current carrying capacity of the source without heating, the arrangement being such that the speed of the motor changes with the

selection of the resistance. Again, this clam defines a motor designed entirely different than the French MI motor and is submitted as being allowable.

For the reasons above, it is respectfully submitted that the application is in condition for allowance and reconsideration and an early allowance is respectfully requested.

Respectfully submitted,

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Encl. Exhibits "A" and "B"

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